

WHAT IS CLAIMED IS:

8-17 1. An optical pickup apparatus enabling to read information of a plurality of recording mediums having different reading wavelengths from each other, comprising:

a light emission part including a first light emission source for emitting a first laser beam and a second light emission source for emitting a second laser beam having a wavelength different from that of the first laser beam, the second light emission source integrally formed with the first light emission source and placed adjacent to the first light emission source, the light emission part controlled to selectively emit the first or second laser beam as a laser beam;

a grating for generating a pair of sub-beams from the laser beam;

a hologram for generating first high-order beams from the laser beam reflected by a recording medium and second high-order beams from the pair of the sub-beams reflected by the recording medium; and

a light receiving part for receiving the first and second high-order beams to generate a focus error signal and a tracking error signal.

2. The optical pickup apparatus according to claim 1 wherein the focus error signal is generated by a beam size method; and

the tracking error signal is generated by a three-beam method.

3. The optical pick up apparatus according to claim 1, wherein the light receiving part comprises:

a pair of three-division light receiving elements;

and

two pairs of sub-beam receiving elements;

the pair of three-division light receiving elements receive the first high-order beams to generate the focus error signal; and

the two pairs of sub-beam light receiving elements are provided by one pair with respect to each of the three-division light receiving elements, and receive the second high-order beams to generate the tracking error signal.

4. The optical pickup apparatus according to claim 3, wherein each of the three-division light receiving elements is divided into three light receiving regions by two parallel division lines; and

each pair of the sub-beam light receiving elements is aligned and placed in a direction perpendicular to the division lines of the three-division light receiving elements.

5. The optical pickup apparatus according to claim

4, wherein the light emission part is placed so that a straight line connecting light emission points of the first and second light emission sources is parallel to the division lines of the three-division light receiving element.

6. The optical pickup apparatus according to claim 4, wherein the hologram is placed so that a straight line connecting incident points of the first high-order beams onto the light receiving part is parallel to the division lines of the three-division light receiving elements.

7. The optical pickup apparatus according to claim 4, wherein the grating is placed so that a straight line connecting the pair of sub-beams is perpendicular to the division lines of the three-division light receiving elements.

8. The optical pickup apparatus according to claim 1, wherein the light receiving part comprises:

a first pair of three-division light receiving elements;

a second pair of three-division light receiving elements;

a first pair of sub-beam light receiving elements;  
and

a second pair of sub-beam light receiving

elements;

when the first laser beam is emitted from the light emission part as the laser beam,

the first pair of the three-division light receiving elements receive the first high-order beams to generate the focus error signal;

the first pair of the sub-beam light receiving elements receive the second high-order beam generated from one of the pair of the sub-beams;

the second pair of the three-division light receiving elements receive the second high-order beams generated from the other of the pair of sub-beams; and

the first pair of the sub-beam light receiving elements and the second pair of the three-division light receiving elements generate the tracking error signal; and

when the second laser beam is emitted from the light emission part,

the first pair of the three-division light receiving elements receive the second high-order beams generated from one of the pair of the sub-beams;

the second pair of the three-division light receiving elements receive the first high-order beams to generate the focus error signal;

the second pair of the sub-beam light receiving

elements receive the second high-order beams generated from the other of the pair of sub-beams; and

the first pair of the three-division light receiving elements and the second pair of the sub-beam light receiving elements generate the tracking error signal.

9. The optical pickup apparatus according to claim 8, wherein the light emission part is placed so that a straight line connecting light emission points of the first and second light emission sources is perpendicular to a surface on which the light receiving part is provided.

10. The optical pickup apparatus according to claim 1, wherein the light receiving part comprises:

a pair of four-division light receiving elements for receiving the first high-order beams to generate the focus error signal; and

two pairs of sub-beam light receiving elements provided by one pair with respect to each of the pair of the four-division light receiving elements, the two pairs of sub-beam light receiving elements for receiving the second high-order beams to generate the tracking error signal,

the first high-order beams are received by continuous

three light receiving regions of the four-division light receiving elements; and

the continuous three light receiving regions for receiving the first high-order beams generated from the first laser beam are different in part from those for receiving the first high-order beams generated from the second laser beam.

11. The optical pickup apparatus according to claim 10, wherein the light emission part is placed so that a straight line connecting light emission points of the first and second light emission sources is perpendicular to a surface on which the light receiving part is provided.

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